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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,527	09/23/2004	Robert L. Thornton	ST 2626.04 US	5526
22887 7590 07/19/2007 DISCOVISION ASSOCIATES 2265 E. 220TH STREET LONG BEACH, CA 90810			EXAMINER CHEN, TIANJIE	
			ART UNIT 2627	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/711,527	<b>Applicant(s)</b> THORNTON ET AL.	
	<b>Examiner</b> Tianjie Chen	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## ***Final Rejection***

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 13-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

- Claim 13 recites "the aerodynamic slider being defined as an air bearing surface adjacent to a p-clad layer." However, the aerodynamic slider is a block of material, which cannot be defined as a surface. One skilled in the art to which it pertains, or with which it is most nearly connected, cannot make and/or use the invention.
- Claims 14-25 are rejected for their dependence from claim 13.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oumi et al (WO 99/59149 with English equivalent US 7,057,998; in the following rejection, the citation will be taken from English equivalent) in view of Tanaka et al (US 6,429,461).

Claim 13, Oumi et al shows an apparatus comprising a single device in Fig. 3 including an aerodynamic slider 1 (Column 5, line 9) and at least one light emitting element 2 (Column 5, line 27) wherein the light emitting element includes an aperture 7 in an emission facet, the device being mounted on a read/write arms via a suspension mechanism (Column 5, lines 9-11), the device being inherently mounted on a read/write arms via a suspension mechanism since it is used for a hard disk apparatus (Column 1, lines 12-15), the device being used to read and write on an optical media, the aerodynamic slider having a air bearing surface adjacent to a emitting surface of the emitting element.

Oumi et al does not show that the detail of the light emitting element.

Tanaka et al shows a monolithic surface light-emitting device (Column 1, lines 19-21) for used in a disk drive for read/write information (Column 1, lines 38-42) and teaches that the surface-emitting device is capable of realizing a lightweight, compact-profile, and reasonable price (Column 3, lines 60-63). One of ordinary skill in the art would have been motivated to apply this surface emitting device into Oumi et al's device for obtaining light weight, compact profile, and reasonable price. In such constructed device, a p-clad layer 110 (Fig. 34; column 39, line 14) would be adjacent the air bearing surface.

Claim 14, Oumi et al further shows that a width "w" of the aperture is of smaller dimension than an output wavelength  $\lambda$  of the laser (Column 5, lines 40-41).

Claim 15, Oumi et al; shows that a reflective read/write surface of optical media during a read/write operation is positioned at an optical path-length of few tens of nm from the emission facet (Column 5, lines 45-47), which is less than the output wavelength  $\lambda$ , which is about 600nm.

3. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oumi et al in view of Tanaka et al as applied to claim 13; further in view of Horie et al (US 6,115,353).

Claim 16, Oumi et al shows the device is used for recording and reproducing information from an optical medium, but does not show the optical medium.

Horie shows an optical media comprises "phase change" media and teaches that this medium exhibits a reduced degradation during repeated overwriting (Column 1, lines 12-15). One of ordinary skill in the art would have been motivated to apply Horie et al's optical medium with Oumi et al's device for being able to do repeated overwriting.

Claim 17, Horie shows that the "phase change" media includes GeTeSb materials (Column 21, lines 49-51).

Claim 18, Horie et al shows that media includes a phase change layer 15 positioned between a protective overcoat 16 and a substrate 13 (Column 6, lines 2-8).

4. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oumi et al in view of Tanaka et al as applied to claim 13; further in view of Horie et al (US 6,115,353) and Fujita et al (US 6,171,150).

Claim 19, Horie et al shows that the optical media includes, a first dielectric layer 18, a phase change layer 15, a second dielectric layer 16, a metal layer 17, a third dielectric layer 14, and a base or substrate 13 (Column 6, lines 2-8).

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Horie et al does not show an outer overcoat of diamond-like carbon.

Fujita et al shows an optical medium, which includes a first dielectric layer 31, second dielectric layer 14, and third dielectric layer 12; and further having an outer overcoat of diamond-like carbon 17 (Column 3, line 7). Fujita teaches that the DLC protective layer can suppress impact on the recording layer, even if the magnetic field modulation head is contacted with the disc under external impact, thus protecting the recording layer (Column 3, lines 26-29). One of ordinary skill in the art would have been motivated to add the DLC layer for protecting the recording layer.

Claim 20, Horie et al further shows that the dielectric layers comprise  $\text{ZnS}:\text{SiO}_2$  (Column 22, lines 65).

5. Claims 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oumi in view of Tanaka et al as applied to claim 13 above, and further in view of Yagi (US 5,068,870).

Claims 21-24; Tanaka et al does not show a p-electric contact.

Yagi et al shows a light emission element, which includes a p-electrical contact 11 (Fig. 1), which is recessed with respect to the emission facet, and is adjacent to the p-clad layer 4 (Fig. 1). Yagi et al teaches that the p-electrical contact is used for controlling the laser output power (Column 1, lines 9-12). One of ordinary skill in the art would have been motivated to add the p-electric contact for controlling the power.

Claim 24, Tanaka shows the p-clad layer are approximated to the emission facet. In Oumi et al, Tanaka et al, and Yagi et al's device, the p-electric contact is next to the p-clad layer; therefore it would also be approximated to the emission facet.

***Allowable Subject Matter***

6. Claim 25 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

- With regard to claim 25, the Oumi et al and Tanaka et al's combination fails to show that the emission facet is substantially co-planer with the air bearing surface.
- Applicant asserts; the optical head of the invention as thus prepared, is a single monolithic device comprising an aerodynamic slider and one or more optimally positioned solid state lasers. The invention thus avoids any complex and time-consuming positioning and attachment of the lasers on the slider, as has been heretofore required with previously used optical heads ([0021]).

***Response to Arguments***

7. Applicant's arguments with respect to claim 13 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is 571-272-7570. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
**TIANJIE CHEN**  
**PRIMARY EXAMINER**